Fig. 25 Percentage reduction of *V. mungo* seed germination on treatment with different concentrations of aqueous extracts of rhizome, leaf and inflorescence of *T. angustifolia*

![Graph showing percentage reduction in seed germination](image)

Fig. 26 Percentage reduction in root and shoot length of *V. mungo* treated with different concentrations of aqueous extracts of rhizome, leaf and inflorescence of *T. angustifolia*

![Graph showing percentage reduction in root and shoot length](image)
Fig. 27 Percentage reduction in fresh and dry weight of _V. mungo_ treated with different concentrations of aqueous extracts of rhizome, leaf and inflorescence of _T. angustifolia_

**Fresh Weight**

**Dry Weight**
Fig. 31 Effect of different solvent extracts of the leaf, rhizome and inflorescence of *Typha angustifolia* on the *H.armigera* larval mortality (%)
Fig. 32 Effect of different solvent extracts of *Typha angustifolia* on the reduction in food consumption of *H.armigera*

A - Inflorescence

B. Leaf

C. Rhizome
Fig. 3
Fig. 4
   2. One Pollen Enlarged ;(Ex – Exine).

B 1. TS of inflorescence of Female flower.
   2. Female flowers enlarged.
   3. One female flower – Ovary; F – Flower;
      FF – Female Flower Enlarged; IA – Inflorescence Axis;
      Ov – Ovary; OVL – Ovule)
Multiple sequence alignment

CLUSTAL 2.1 multiple sequence alignment

**“*” – Indicates conservation (same sequence in the region)**
Blue line is 95 percent "Working-Hotelling" confidence band for the fitted red line

\[ Y = -2.3861x + 0.61537; \quad r = 0.99145; \quad p = 0.0832; \quad 95\% \text{ bootstrapped confidence intervals:} \]

\[ b: [-3.212; 1.9] \]
\[ a: [-0.4972; 1.231] \]

Fig. 28  Regression line between log dose and probit value - leaf extract
Blue line is 95 percent "Working-Hotelling" confidence band for the fitted red line

\[ Y = 0.55254 \times -2.3887; r=0.889; p=0.302; \] 95% bootstrapped confidence intervals:

- \( b \): \([-3.936; 2.683]\)
- \( a \): \([-0.5289; 1.105]\)

Fig.29  Regression line between log dose and probit value - inflorescence extract
Blue line is 95 percent "Working-Hotelling" confidence band for the fitted red line
Y = 0.97145 x - 3.7797; r = 0.99117; p = 0.0846; 95% bootstrapped confidence intervals:
b: [-5.002; -3.01]
a: [0.789; 1.943]

Fig. 30  Regression line between log dose and probit value - rhizome extract
Fig.1 View of the Pallikaranai marshland inhabited by *Typha angustifolia*
Fig. 2 (A) *Helicoverpa armigera* male and female adults, (B) Rearing setup for adult, (C) Individual rearing of *H. armigera* larva on freshly prepared artificial diet.
GENOMIC DNA of plant samples

Fig.11 Agarose – gel electrophoresis

Lane 1= marker , A = Velachery,  B = Pallikaranai,  C = Pallavaram,  D = Ramavaram,
E= Pulicat lake,  F= Mathuranthagam
Lane 1 = marker, B = Pallikaranai, D = Ramavaram, E = Pulicat lake, F = Mathuranthagam

Fig. 12 RFLP analysis of *matK* gene: Separation of fragments by gel electrophoresis
B= Pallikaranai, D= Ramavaram, E= Pulicat lake, F= Mathuranthagam

Fig.13 Phylogenetic tree – Neighbor joining tree (MEGA 5)
Fig. 14 Molecular Phylogenetic analysis by Maximum Likelihood method
Fig. 21 GC-MS chromatogram of the chloroform extract of *T. angustifolia* - inflorescence.
Fig. 18 GC-MS chromatogram of the chloroform extract of *T. angustifolia* -leaf
Fig.15 GC-MS chromatogram of the chloroform extract of *T. angustifolia* - rhizome
Fig. 22 GC-MS chromatogram of the ethyl acetate extract of *T. angustifolia* - inflorescence
Fig. 23 GC-MS chromatogram of the ethyl acetate extract of *T. angustifolia* - Inflorescence
Fig. 19 GC-MS chromatogram of the ethyl acetate extract of T. angustifolia–leaf
Fig. 16 GC-MS chromatogram of the ethyl acetate extract of *T. angustifolia* -rhizome
Fig. 24 GC-MS chromatogram of the methanol extract of *T. angustifolia* -inflorescence
Fig. 20 GC-MS chromatogram of the methanol extract of *T. angustifolia* -leaf
Fig. 17 GC-MS chromatogram of the methanol extract of *T. angustifolia* -rhizome
Fig. 3

A- 1 : TS of Submarginal part of the lamina
2 & 3.– Two marginal portions of the lamina

( AC – Air-chambers; LM – Leaf Margin; MT – Mesophyll Tissue; PF – Partition Filaments; PM – Palisade Mesophyll; Se – Septum; SP – Stellate Parenchyma; VB – Vascular Bundle)

B:TS of lamina through Middle part

( IB – Inner Bundle; OVB – Outer Vascular Bundle; PF – Partition Filament; PF – Partition Filament; Ph – Phloem; X – Xylem)

C- 1: Adaxial part of the lamina – in sectional view
2. Abaxial part of the lamina
3. Partition filament of the air-chambers – enlarged

(AbE – Abaxial epidermis; AbB – Abaxial Vascular Bundle; AdE – Adaxial Epidermis; AdB – Adaxial Bundle; MX – Metaxylem; Ph – Phloem; PM – Palisade Mesophyll; Sc – Sclerenchyma; PF – Partition Filament; X – Xylem)
A: TS of lamina – passing through mid-part – Vascular strand enlarged

(Ph – Phloem; MX – Metaxylem; Sc – Sclerenchyma; X – Xylem)

B - 1: TS of curled marginal part of the lamina
2. Middle part showing a Vascular Bundle

(AC – Air Chamber; IEp – Inner Epidermis; OEP – Outer Epidermis; Ph – Phloem; X – Xylem)

C-1: TS of Rhizome – outer periderm
2. TS of Rhizome – Cortical zone
3. Stelar region

(AC – Air Chamber; En – Endodermis; Fi – Fibres; CVB – Central Vascular Bundle; OVB – Outer Vascular Bundle; Pe – Periderm; PF – Partition Filament; VB – Vascular Bundle)

D- 1:TS of Rhizome – Periderm portion
2. A portion of the stele

(Co – Cortex; En – Endodermis; Ph – Phloem; Sc – Sclerenchyma; SPe – Soried Periderm; St – Stele; X – Xylem)
Fig. 5

A- 1: Cortical aerenchyma zone of the Periderm
2. Outer and Inner vascular bundles of the stele

( AC – Air Chamber; Fi – Fibre; MX – Metaxylem; PF – Partition Filament; Ph – Phloem; Sc – Sclerenchyma; VB – Vascular Bundle )

B- 1: TS of Root
2. TS of Root – A sector

( AC – Air Chamber; En – Endodermis; IC – Inner Cortex; MX – Metaxylem; OC – Outer Cortex; PX – Protoxylem; PC – Pericycle; PF – Partition Filament; Ph – Phloem; St – Stele )

C- 1: TS of Root – Stele & Cortex enlarged
2. Stele – enlarged

( AC – Air Chamber; En – Endodermis; MX – Meta Xylem; PC – Pericycle; Ph – Phloem; Sc – Sclerenchyma; Pe – Periderm )

D- 1: TS of inflorescence axis of male flowers
2. Male flowers – enlarged
3. Pollen grains in the anther

( An – Anther; IA – Inflorescence axis; MF – Male Flower; Po – Pollen )